

In the Claims

1-49 (Canceled).

50 (Currently Amended). A recombinant, purified or isolated polynucleotide comprising:

- a) at least ~~500~~ 1000 consecutive nucleotides of SEQ ID NO: 179;
- b) SEQ ID NO: 179;
- c) ~~a contiguous span of at least 40, 50, 60, 70, 80, 90, 100, 150, 200, or 500 nucleotides of SEQ ID NO: 179, wherein said contiguous span comprises at least 1 of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, or 55666-56146;~~
- d) ~~a contiguous span of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, 55666-56146 or a complementary span of nucleotides to said contiguous span of nucleotide positions;~~

c)e) a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179 or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179, wherein:

- i) X is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30;
- ii) Y is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30; and
- iii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703; 34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783; 47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440; 50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468; 51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282; 52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389; 53511; 53600; 53665; 53815; 54365; or 54541; or

d)f) a polynucleotide of at least 500 1000 consecutive nucleotides that is complementary to a polynucleotide as set forth in a), b), or c); or

e) a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179 or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179, wherein:

- i) X is equal to 15, 18, 20, 25, 30, or a range of 15 to 30; and
- ii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703;

34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783;
47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440;
50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468;
51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282;
52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389;
53511; 53600; 53665; 53815; 54365; or 54541.

51 (Currently Amended). A vector comprising a polynucleotide:

- a) comprising at least 500 1000 consecutive nucleotides of SEQ ID NO: 179;
- b) comprising SEQ ID NO: 179;
- c) comprising a contiguous span of at least 40, 50, 60, 70, 80, 90, 100, 150, 200, 500 nucleotides of SEQ ID NO: 179, wherein said contiguous span comprises at least 1 of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, or 55666-56146;
- d) comprising a contiguous span of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149,

~~39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, 55666-56146 or a complementary span of nucleotides to said contiguous span of nucleotide positions;~~

- c) e) comprising a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179 or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179, wherein:
 - i) X is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30;
 - ii) Y is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30; and
 - iii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703; 34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783; 47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440; 50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468; 51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282; 52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389; 53511; 53600; 53665; 53815; 54365; or 54541; or
- d) f) comprising a polynucleotide of at least ~~500~~ 1000 consecutive nucleotides that is complementary to a polynucleotide as set forth in a), b), or c); or
- e) a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179 or a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179, wherein:
 - i) X is equal to 15, 18, 20, 25, 30, or a range of 15 to 30; and
 - ii) N is equal to one of the following values: 2159; 2443; 4452; 5733;

8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310;
13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034;
18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703;
34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783;
47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440;
50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468;
51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282;
52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389;
53511; 53600; 53665; 53815; 54365; or 54541.

52 (Currently Amended). A host cell comprising:

1) a polynucleotide comprising:

- a) at least ~~500~~ 1000 consecutive nucleotides of SEQ ID NO: 179;
- b) SEQ ID NO: 179;
- c) ~~a contiguous span of at least 40, 50, 60, 70, 80, 90, 100, 150, 200, or 500 nucleotides of SEQ ID NO: 179, wherein said contiguous span comprises at least 1 of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54546-55209, or 55666-56146;~~
- d) ~~a contiguous span of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007,~~

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~~22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568,~~
~~24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776,~~
~~30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269,~~
~~40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065,~~
~~48192-49692, 49723-50174, 52626-53599, 54516-55209, 55666-56146~~ or a
complementary span of nucleotides to said contiguous span of nucleotide
positions;

c) e) a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179 or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179, wherein:

- i) X is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30;
- ii) Y is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30; and
- iii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703; 34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783; 47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440; 50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468; 51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282; 52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389; 53511; 53600; 53665; 53815; 54365; or 54541; or

d) f) a polynucleotide of at least ~~500~~ 1000 consecutive nucleotides that is complementary to a polynucleotide as set forth in a), b), or c); or

c) a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179 or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning

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from position N-X to position N-1 of SEQ ID NO: 179, wherein:

- i) X is equal to 15, 18, 20, 25, 30, or a range of 15 to 30; and
- ii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703; 34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783; 47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440; 50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468; 51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282; 52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389; 53511; 53600; 53665; 53815; 54365; or 54541;

2) a vector comprising a polynucleotide:

- a) comprising at least 500 1000 consecutive nucleotides of SEQ ID NO: 179;
- b) comprising SEQ ID NO: 179;
- c) comprising a contiguous span of at least 40, 50, 60, 70, 80, 90, 100, 150, 200, or 500 nucleotides of SEQ ID NO: 179, wherein said contiguous span comprises at least 1 of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, or 55666-56146;
- d) comprising a contiguous span of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-

6086, 6310 8710, 9136 11170, 11534 12104, 12733 13163, 13206 14150, 14191 14302, 14338 14359, 14788 15589, 16050 16409, 16440 21718, 21959 22007, 22086 23057, 23488 23712, 23832 24099, 24165 24376, 24429 24568, 24607 25096, 25127 25269, 25300 27576, 27612 29217, 29415 30776, 30807 30986, 31628 32658, 32699 36324, 36772 39149, 39184 40269, 40580 40683, 40844 41048, 41271 43539, 43570 47024, 47510 48065, 48192 49692, 49723 50174, 52626 53599, 54516 55209, 55666 56146 or a complementary span of nucleotides to said contiguous span of nucleotide positions;

- c) e) comprising a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179 or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179, wherein:
 - i) X is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30;
 - ii) Y is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30; and
 - iii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703; 34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783; 47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440; 50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468; 51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282; 52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389; 53511; 53600; 53665; 53815; 54365; or 54541; or
- d) f) comprising a polynucleotide of at least 500 1000 consecutive nucleotides that is complementary to a polynucleotide as set forth in a), b), or c); or
- c) a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179

or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179, wherein:

- i) X is equal to 15, 18, 20, 25, 30, or a range of 15 to 30; and
- ii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703; 34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783; 47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440; 50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468; 51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282; 52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389; 53511; 53600; 53665; 53815; 54365; or 54541.

53 (Currently Amended). A nonhuman host animal or mammal comprising:

- 1) a polynucleotide comprising:

- a) at least 500 1000 consecutive nucleotides of SEQ ID NO: 179;
- b) SEQ ID NO: 179;
- c) a contiguous span of at least 40, 50, 60, 70, 80, 90, 100, 150, 200, or 500 nucleotides of SEQ ID NO: 179, wherein said contiguous span comprises at least 1 of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065,

48192-49692, 49723-50174, 52626-53599, 54516-55209, or 55666-56146;

d) a contiguous span of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, 55666-56146 or a complementary span of nucleotides to said contiguous span of nucleotide positions;

c) e) a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179 or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179, wherein:

- i) X is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30;
- ii) Y is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30; and
- iii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703; 34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783; 47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440; 50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468; 51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282; 52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389; 53511; 53600; 53665; 53815; 54365; or 54541; or

d) a polynucleotide of at least 500 1000 consecutive nucleotides that is complementary to a polynucleotide as set forth in a), b), or c); or

c) a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179 or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179, wherein:

- i) X is equal to 15, 18, 20, 25, 30, or a range of 15 to 30; and
- ii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703; 34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783; 47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440; 50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468; 51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282; 52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389; 53511; 53600; 53665; 53815; 54365; or 54541;

2) a vector comprising a polynucleotide:

- a) comprising at least 500 1000 consecutive nucleotides of SEQ ID NO: 179;
- b) comprising SEQ ID NO: 179;
- c) comprising a contiguous span of at least 40, 50, 60, 70, 80, 90, 100, 150, 200, or 500 nucleotides of SEQ ID NO: 179, wherein said contiguous span comprises at least 1 of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-

~~30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, or 55666-56146;~~

d) comprising a contiguous span of the following nucleotide positions of SEQ ID NO: 179: ~~1-2324, 2852-2936, 3204-3249, 3456-3572, 3899-4996, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, 55666-56146~~ or a complementary span of nucleotides to said contiguous span of nucleotide positions;

c) comprising a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179 or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179, wherein:

- i) X is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30;
- ii) Y is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30; and
- iii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703; 34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783; 47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440; 50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468; 51515; 51557; 51566; 51632; 51666; 52016;

52096; 52151; 52282; 52348; 52410; 52580; 52712; 52772; 52860; 53092;

53272; 53389; 53511; 53600; 53665; 53815; 54365; or 54541; or

d) comprising a polynucleotide of at least 500 1000 consecutive nucleotides that is complementary to a polynucleotide as set forth in a), b), or c); or

c) a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179 or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179, wherein:

- i) X is equal to 15, 18, 20, 25, 30, or a range of 15 to 30; and
- ii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703; 34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783; 47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440; 50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468; 51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282; 52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389; 53511; 53600; 53665; 53815; 54365; or 54541.

54-55 (Canceled).

56 (Previously Presented). The isolated, purified, or recombinant polynucleotide of claim 50, further comprising a label.

57 (Previously Presented). The isolated, purified, or recombinant polynucleotide of claim 50, wherein said polynucleotide is attached to a solid support.

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58 (Previously Presented). A random or addressable array of polynucleotides comprising at least one polynucleotide according to claim 50.

59 (Currently Amended). The isolated, purified, or recombinant polynucleotide according to claim 50, wherein said polynucleotide is at least ~~500~~ 1000 consecutive nucleotides of SEQ ID NO: 179.

60 (Previously Presented). The isolated, purified, or recombinant polynucleotide according to claim 50, wherein said polynucleotide is SEQ ID NO: 179.

61-62 (Cancelled).

63 (Currently Amended). The isolated, purified, or recombinant polynucleotide according to claim 50, wherein said polynucleotide is a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179 or a contiguous span of nucleotides that is complementary to said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179, wherein:

- i) X is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30;
- ii) Y is equal to 8, 10, 12, 15, 20, 25, or a range of 8 to 30; and
- iii) N is equal to one of the following values: 2159; 2443; 4452; 5733; 8438; 11843; 1983; 12080; 12221; 12947; 13147; 13194; 13310; 13342; 13367; 13594; 13680; 13902; 16231; 16388; 17608; 18034; 18290; 18786; 22835; 22872; 25183; 25192; 25614; 26911; 32703; 34491; 34756; 34934; 5160; 39897; 40598; 40816; 40947; 45783; 47929; 48206; 48207; 49282; 50037; 50054; 50101; 50220; 50440; 50562; 50653; 50660; 50745; 50885; 51249; 51333; 51435; 51468; 51515; 51557; 51566; 51632; 51666; 52016; 52096; 52151; 52282; 52348; 52410; 52580; 52712; 52772; 52860; 53092; 53272; 53389; 53511; 53600; 53665; 53815; 54365; or 54541.

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64 (Currently Amended). The isolated, purified, or recombinant polynucleotide according to claim 50, wherein said polynucleotide is a polynucleotide of at least ~~500~~ 1000 consecutive nucleotides that is complementary to a polynucleotide as set forth in claim 60.

65-66 (Canceled)

67 (New). The recombinant, purified or isolated polynucleotide according to claim 50, wherein said recombinant, purified, or isolated polynucleotide is a probe consisting essentially of said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179.

68 (New). The recombinant, purified or isolated polynucleotide according to claim 50, wherein said recombinant, purified, or isolated polynucleotide is a probe consisting essentially of a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179.

69 (New). The recombinant, purified or isolated polynucleotide according to claim 50, wherein said recombinant, purified, or isolated polynucleotide is a probe consisting of said contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N+Y of SEQ ID NO: 179.

70 (New). The recombinant, purified or isolated polynucleotide according to claim 50, wherein said recombinant, purified, or isolated polynucleotide is a probe consisting of a contiguous span of nucleotides selected from a group of nucleotide sequences spanning from position N-X to position N-1 of SEQ ID NO: 179.

71 (New). A recombinant, purified or isolated polynucleotide comprising:

- a) a contiguous span of at least 40, 50, 60, 70, 80, 90, 100, 150, 200, 500 or 1000 nucleotides of SEQ ID NO: 179, wherein said contiguous span

comprises at least 1 of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, or 55666-56146; or

b) a contiguous span of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, 55666-56146 or a complementary span of nucleotides to said contiguous span of nucleotide positions.

72 (New). The recombinant, purified or isolated polynucleotide according to claim 71, said contiguous span comprising at least 1 of the nucleotide positions polynucleotide selected from positions: 1-2324, 2852-2936, 3204-3249, 3456-3572, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, 55666-56146 or a complementary span of nucleotides to said contiguous span of nucleotide positions.

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43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, or 55666-56146.

73 (New). The recombinant, purified or isolated polynucleotide according to claim 71, said contiguous span comprising at least 1 of the nucleotide positions polynucleotide selected from positions: 3456-3572 or 5028-6086.

74 (New). The recombinant, purified or isolated polynucleotide according to claim 71, said polynucleotide comprising: a contiguous span of at least 40, 50, 60, 70, 80, 90, 100, 150, 200, 500 or 1000 nucleotides of SEQ ID NO: 179, wherein said contiguous span comprises at least 1 of the following nucleotide positions of SEQ ID NO: 179: 1-2324, 2852-2936, 3204-3249, 3456-3572, 5028-6086, 6310-8710, 9136-11170, 11534-12104, 12733-13163, 13206-14150, 14191-14302, 14338-14359, 14788-15589, 16050-16409, 16440-21718, 21959-22007, 22086-23057, 23488-23712, 23832-24099, 24165-24376, 24429-24568, 24607-25096, 25127-25269, 25300-27576, 27612-29217, 29415-30776, 30807-30986, 31628-32658, 32699-36324, 36772-39149, 39184-40269, 40580-40683, 40844-41048, 41271-43539, 43570-47024, 47510-48065, 48192-49692, 49723-50174, 52626-53599, 54516-55209, 55666-56146 or a complementary span of nucleotides to said contiguous span of nucleotide positions.

75 (New). The recombinant, purified or isolated polynucleotide according to claim 74, said polynucleotide comprising a contiguous span of at least 40 nucleotides.

76 (New). The recombinant, purified or isolated polynucleotide according to claim 74, said polynucleotide comprising a contiguous span of at least 50 nucleotides.

77 (New). The recombinant, purified or isolated polynucleotide according to claim 74, said polynucleotide comprising a contiguous span of at least 60 nucleotides.

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78 (New). The recombinant, purified or isolated polynucleotide according to claim 74, said polynucleotide comprising a contiguous span of at least 70 nucleotides.

79 (New). The recombinant, purified or isolated polynucleotide according to claim 74, said polynucleotide comprising a contiguous span of at least 80 nucleotides.

80 (New). The recombinant, purified or isolated polynucleotide according to claim 74, said polynucleotide comprising a contiguous span of at least 90 nucleotides.

81 (New). The recombinant, purified or isolated polynucleotide according to claim 74, said polynucleotide comprising a contiguous span of at least 100 nucleotides.

82 (New). The recombinant, purified or isolated polynucleotide according to claim 74, said polynucleotide comprising a contiguous span of at least 200 nucleotides.

83 (New). The recombinant, purified or isolated polynucleotide according to claim 74, said polynucleotide comprising a contiguous span of at least 500 nucleotides.

84 (New). The recombinant, purified or isolated polynucleotide according to claim 74, said polynucleotide comprising a contiguous span of at least 1000 nucleotides.